COMPONENT EIGHT
RESPONSE TO DETECTIONS OF PESTICIDES

8.1 INTRODUCTION

Component 7 described actions the State may take to *prevent* pesticides from contaminating ground water. Component 8 includes these prevention actions plus it develops actions the State may take in response to pesticide *detection(s)* in ground water. Public input will be gathered to provide future direction to these actions. Component 8 objectives were developed to ensure that the reference point would not be reached or exceeded. An established reference point may be a Maximum Contaminant Level (MCL), a Health Advisory (HA) or a ground water quality standard. The Environmental Protection Agency (EPA) has an established reference point for the each of the proposed five State Management Plan (SMP) pesticides. The State may establish a more stringent reference point if deemed necessary.

The EPA has oversight of South Dakota's SMP. In the EPA SMP guidance document Appendix A it is stated that if the SMP fails to afford the proper protection of the ground water resource and the State does not correct these deficiencies, then the approval of the SMP may be withdrawn, effectively leading to a prohibition on the legal sale and use of the pesticide in the State. The South Dakota Department of Agriculture (SDDA) will continue to work for South Dakota's agricultural interests in the state, while at the same time taking the necessary actions to protect sensitive ground water areas from pesticide contamination. In stressing prevention as the key element in the SMP process and by encouraging the State's rule process to occur, SDDA is optimistic this flexible Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) program will protect the ground water resources of the state.

In Component 8, approaching or reaching a reference point in a currently used or reasonably expected source of drinking water, or in drinking water that is closely hydrologically connected to surface water, would result in a site investigation. When investigating a pesticide contamination incident involving water the normal timeline for pesticide investigations will be followed. However, if SDDA determines through the investigation that the cause of the contamination may involve a nonpoint source and may also involve the legal use of a pesticide the investigation will operate under the outline listed below, starting in section 8.3. Due to the difficulty in determining the cause of a nonpoint source of contamination several criteria will guide the investigation process. The SDDA will convene an advisory group for the specific pesticide(s), which has been detected. A needs assessment, including a registration benefit review may be completed to determine if additional actions will minimize or reduce further impacts on the water resource. A list of Best Management Practices (BMPs) and other actions (as listed in Table 7.1) may be developed for promotion. The educational process will continue throughout the investigation. Pesticide Specific BMPs and other actions will be promoted. Depending on the outcome of the investigation, development of a Specific Pesticide SMP (SPSMP) rule will be considered by SDDA.

In general the SDDA site investigation may include the help of others on an, as needed basis. The investigation may require the expertise and support of the Cooperative Extension Service, the Department of Environment and Natural Resources, the Natural Resources Conservation Service, South Dakota State University, and the US Geological Survey. Components two and three list the services the agencies are able to support in SMP actions. Depending on the outcome of the investigation, the State could take actions that may lead to implementation of pesticide controls or product cancellation. Component 8 outlines how the State may respond to contamination at or above 50% of the reference point. Reaching or exceeding 50% of the reference point may trigger a site investigation and could result in pesticide controls or response actions, such as implementation of best management practices, use restrictions and/or use prohibitions. As information available to a Pesticides and Ground Water Advisory Group (PAGWAG) and

SDDA indicates local water quality impairments are significant or increasing, responses are expected to become increasingly stringent. The statewide ground water quality monitoring network may help in predicting the potential a pesticide has to leach to ground water. Subsequent laboratory analysis of current sources of drinking water may represent what impact pesticide use has on ground water. The PAGWAG and SDDA will draw conclusions and inferences by incorporating monitoring data of the affected ground water resource with environmental and geological site characteristics, and pesticide use information, along with considering the value of the ground water resource. Finally, SDDA will consider implementation of options within the realm of the SMP (including rule development) based on the above mentioned inferences and conclusions.

The SDDA will take action based on preventing unreasonable adverse effects on the environment, under FIFRA. In part FIFRA states "unreasonable adverse effects on the environment means any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide, or a human dietary risk from residues that result from a use of a pesticide in or on any food inconsistent with the standard."

The following sections in Component 8 are guidelines designed to prescribe an action based on the severity and trends of a problem. By allowing SDDA this flexibility each situation can be dealt with uniquely by encouraging innovative thinking and introducing new technology to deal with any situation which may arise. The SDDA receives its authority to restrict the use of certain pesticides and disallow the use of certain pesticides in the state or for designated areas within the state from SDCL §38-21-39. Many of these actions involve rule development. The following paragraphs discuss actions that may be taken.

8.2 NO VERIFIED DETECTION [1]

- Continue preventative activities as described in Component 7.
- Key on general education and outreach.

8.3 A VERIFIED DETECTION BELOW 50% OF REFERENCE POINT FOUND IN A STATE MONITORING WELL OR A REGULATORY SAMPLE

- A PAGWAG is notified of a verified detection.
- Continue preventative activities as described in Component 7. (See Specific Pesticide Control Measure examples, Table 7.1).
- Best Management Practices (BMPs) are encouraged to be adopted in area(s) of concern.
- Increase public information efforts in same area(s).
- Consider changes in the certification program for pesticide applicators in targeted area(s).
- Provide informational brochures in targeted area(s).
- Continue general pesticide and natural resource education in the area.
- Directed education in localized area of detection will increase.

[1] A verified detection is a detection that is determined to represent the condition of the ground water, leaving no doubt that this compound exists in the ground water. The sample will be a regulatory or specific monitoring well sample.

8.4 A VERIFIED DETECTION AT OR ABOVE 50% BUT BELOW 100% OF THE REFERENCE POINT FOUND IN A STATE MONITORING WELL OR A REGULATORY SAMPLE

The following points are options, and the extent of the State's actions will depend on the level of funding available and the outcome of an investigation. A priority for SDDA and the PAGWAG is to investigate the source of the contamination and offer suggestions for corrective actions.

- Continue preventative activities as described in Component 7. (See Specific Pesticide Control Measure examples, Table 7.1).
- A PAGWAG is notified of a verified detection.
- Investigate to support the verified detection. If the detection has been determined to be a verified detection, SDDA and/or others with available expertise, will conduct an investigation to:
    - ◊ Investigate the source of the pesticide contamination.
        - * If the source is found to be a point source, various regulatory agencies responsible for point source contamination response are advised of the situation and will act according to preexisting law and rule.
        - * If the source is found to be a nonpoint source, attempt to determine the extent of the contamination[2].
    - ◊ Review current pesticide activities in the area surrounding the contamination.
    - ◊ Investigate the existence of historical detections, verified or unverified.
    - ◊ Define a trend of contamination concentration, if a trend exists [3].
- A PAGWAG will review the results of an investigation to determine a geographic area[4] which could be subject to response actions and will provide their findings to the Secretary of Agriculture. Areas that are similar in use patterns, geology, and soil characteristics shall be considered the same when consideration is given to response to detection actions.
- A PAGWAG will then utilize information from the investigation to recommend actions to the SDDA, which may include:
    - ◊ General pesticide and natural resource education in the area.
    - ◊ Directed education in a localized area where detection has occurred.
    - ◊ Directed outreach and awareness programs in the localized area.
    - ◊ Certification changes in the area may be adopted.

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[2] Investigation of the vertical and horizontal extent of contamination is based on laboratory analysis of water samples drawn from monitoring wells (existing or new wells) and public or private water supplies. A PAGWAG will also consider other information that is available to determine the extent of the area affected.

[3] A statistical trend analysis may be conducted on historical data. If, upon review of the data, it is found that the trend is non-significant, it will be defined as undetermined or a stable condition.

[4] The PAGWAG developing the Generic SMP and the SDDA recognize that geographic boundaries need to be easily recognized in order for pesticide users to comply with imposed regulation implemented in a Pesticides and Ground Water State Management Plan. Political boundaries or major landmarks shall delineate these areas.

- ◊ Mitigation of a site specific problem which may include (but are not limited to):
  - * Promote voluntary BMPs.
  - * Modification of use practices.
  - * Actions specific to individual pesticides as provided for in PSSMPs.
- ◊ Special restrictions [5] in a localized area to be determined from information gathered as the result of an investigation or;
- ◊ Dependent on the results of the trend analysis a PAGWAG may recommend:
  - * Expanded directed education in the localized area where detection has occurred.

- Expanded directed outreach and awareness programs in the localized area.
- If SDDA has substantial evidence to suspect an increase in contamination may be realized in the future, monitoring efforts may be increased in areas that possess similar use patterns and vulnerability. Along with this, the geographic extent of the state monitoring network may be expanded to increase understanding of the expanse of pesticide contamination within an aquifer or group of aquifers. Cooperation in this endeavor will be sought from the registrant(s).
- The DENR will alert all Public Water Supply (PWS) systems determined to be within the affected region, of a PAGWAG's SMP findings.
- If no wellhead protection program has been developed, DENR will approach the PWS system(s) to advise and assist the PWS systems to develop a wellhead protection program as provided for in SDCL §34A-3A-17.
- Alert private well owners of the detection and suggest that they have their water supply analyzed for the subject compound(s). Sample results will be voluntarily submitted to local Cooperative Extension Service (CES) agents who will compile information and forward it to the SDDA. Cooperative Extension Service agents and others will provide technical support for private well owners to assist in water supply sampling, laboratory result interpretation and risk analysis.
- If a PAGWAG has substantial evidence to believe that a verified detection is an anomaly and the detected concentration is expected to return to an acceptable level, preventative actions currently enacted will continue. However, the detection shall be recorded and may be used in future actions if subsequent detections are verified.

8.5 A VERIFIED DETECTION AT OR ABOVE 100% OF THE REFERENCE POINT FOUND IN STATE MONITORING WELL OR A REGULATORY SAMPLE.

- Continue preventative activities as described in Component 7. (See Specific Pesticide Control Measure examples listed in Table 7.1).
- A PAGWAG is notified of a verified detection.
- Investigate to support the verified detection. If the detection has been determined to be a verified detection, SDDA and/or others with available expertise, will conduct an investigation to:
  - ◊ Investigate the source of the contamination.
    - * If the source is found to be a point source, various regulatory agencies responsible for point source contamination response are advised of the situation and will act according to preexisting law and rule.
    - * If the source is found to be a nonpoint source, attempt to determine the extent of the contamination.

[5] Special restrictions are restrictions placed on the use of a pesticide and will be defined by a pesticide specific state management plan.

- ◊ Review current pesticide activities in the area surrounding the contamination.
- ◊ Investigate the existence of historical detections, verified or unverified.
- ◊ Define a trend of contamination concentration, if a trend exists.

- A PAGWAG will review the results of an investigation to determine a geographic area which could be subject to response actions and will provide their findings to the Secretary of Agriculture. Areas that are similar in use patterns, hydrogeology, and soil characteristics shall be considered the same when consideration is given to response to detection actions.
- The SDDA may increase monitoring efforts in areas that possess similar pesticide use patterns and vulnerability.
- Options may be employed in an attempt to reduce concentrations to below the reference point, options similar to but not exclusive to Section 8.4.
- The DENR will alert all PWS systems determined to be within the affected region, of a PAGWAG's SMP findings.
- If no wellhead protection program has been developed, DENR will approach the PWS system(s) to advise and assist PWS systems to develop a wellhead protection program as provided for in SDCL §34A-3A-17.
- Alert private well owners of the detection and suggest that they have their water supply analyzed for the subject compound(s). Sample results will be voluntarily submitted to local CES agents who will compile information and forward it to SDDA. Cooperative Extension Service agents and others shall provide technical support for private well owners to assist in water supply sampling, laboratory result interpretation and risk analysis. Clean drinking water may be offered to private well user(s), through registrants or other means.
- If a PAGWAG has substantial evidence to believe that a verified detection is an anomaly and the detected concentration is expected to return to an acceptable level, preventative actions currently enacted will continue. However, the detection shall be recorded and used to make determinations of actions if subsequent detections are verified.

The SDDA will use the results of an investigation to determine the appropriate response and to evaluate if product restrictions or cancellation are necessary to maintain and preserve current and reasonable expected sources of drinking water. A PAGWAG may suggest any means available to mitigate the problem, which SDDA will consider if reasonable and substantial evidence is presented.

8.6 THE CANCELLATION PROCESS

The SDDA receives its authority to restrict the use of certain pesticides and disallow the use of certain pesticides in the state or for designated areas within the state from SDCL §38-21-39. Many of these actions involve rule development.

If cancellation is determined to be the only alternative to preserving currently used and reasonably expected sources of drinking water, or ground water closely hydrologically connected to surface water, the SDDA shall use all available information to determine the extent of the area in which the product is to be canceled. The following are examples of use restriction areas.

- ◊ Small Region (Section)
  - * This area is defined by a restrictive boundary encompassing a small region or a section in which a pesticide has either had restrictions placed on its use or the pesticide use has been canceled.
- ◊ Medium Region (Township)
  - * This area is defined by a restrictive boundary encompassing a medium size region or a township in which a pesticide has either had restrictions placed on its use or the pesticide use has been canceled.
- ◊ Large Region (County or Counties)
  - * This area is defined by a restrictive boundary encompassing a large region or a county (or counties) in which a pesticide has either had restrictions placed on its use or the pesticide use has been canceled.
- ◊ Statewide Restrictions
  - * A pesticide may have its use restricted statewide, by the SDDA.
- ◊ Statewide Cancellation
  - * A pesticide may have its use canceled statewide, by the SDDA.

This same location restriction mechanism may also be used for other SMP label actions.